This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

Torreya

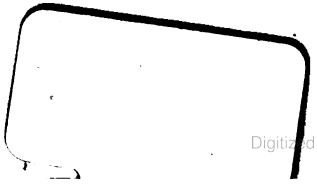
Torrey Botanical Club

Digitized by Google

3 2044 106 431 224

73- T69 v.2
1902

W. G. PARLOW



Digitized by Google

Digitized by Google

Digitized by Google

TORREYA

MONTHLY JOURNAL OF BOTANICAL NOTES AND NEWS

JOHN TORREY, 1790–1873

EDITED FOR

THE TORREY BOTANICAL CLUB

BY

MARSHALL AVERY HOWE

Volume II.

NEW YORK

1902

Digitized by Google

73
T64
v.2
1902

PRESS OF
THE NEW ERA PRINTING COMPANY,
LANCASTER, PA.

Digitized by Google

THE TORREY BOTANICAL CLUB

OFFICERS FOR 1902.

President,
HON. ADDISON BROWN, LL.D.

Vice-Presidents,
T. F. ALLEN, M.D.
HENRY H. RUSBY, M.D.

Recording Secretary,
EDWARD S. BURGESS, PH.D.,
Normal College, New York City

Corresponding Secretary,
JOHN K. SMALL, PH.D.,
Botanical Garden, Bronx Park, New York City.

Editor,
L. M. UNDERWOOD, PH.D.
Columbia University.

Treasurer,
FRANCIS E. LLOYD, A M.
Columbia University.

Associate Editors.
NATHANIEL L. BRITTON, PH.D.
CARLTON C. CURTIS, PH.D.
MARSHALL A. HOWE, PH.D.
FRANCIS E. LLOYD, A.M.
DANIEL T. MACDOUGAL, PH.D.
HERBERT M RICHARDS, S.D.
ANNA MURRAY VAIL.

Meetings the second Tuesday and last Wednesday of each month alternately at the College of Pharmacy and the New York Botanical Garden.

PUBLICATIONS. Bulletin. Monthly, established 1870. Price $3.00 per year; single numbers 30 cents. Of former volumes only 1–6, 13, and 19–27 can be supplied entire. Partial numbers only of vols. 7–18 are available, but the completion of sets will be undertaken. All correspondence to be directed to the Editor or Treasurer at Columbia University, New York City.

Memoirs. A series of technical papers published at irregular intervals established 1889. Price $3.00 per volume.

Torreya. Monthly, established 1901. Price $1.00 per year. Address the Editor of Torreya, New York Botanical Garden, Bronx Park, New York city.

Digitized by Google

Digitized by Google

Vol. 2 January, 1902 No. 1

TORREYA

A Monthly Journal of Botanical Notes and News

EDITED FOR
THE TORREY BOTANICAL CLUB
BY
MARSHALL AVERY HOWE

JOHN TORREY, 1796–1873

CONTENTS

Conservation of Energy in Mycological Clubs: Lucien M. Underwood..... 1
The Field Study of Mushrooms: F. S. Earle..... 2
The "Tendrils" of the Kentucky Coffee-tree: Byron D. Halsted..... 5
A new Timber for Railroad Ties: H. H. Rusby..... 6
Some Notes on the Dwarf Mistletoe: Clifton D. Howe..... 8
Shorter Notes
A Georgia Rhododendron: J. K. Small..... 9
A new Mouriria from Porto Rico: N. L. Britton..... 10
Proceedings of the Club: Edward S. Burgess..... 10
News Items..... 13

Published for the Club
At North Queen Street, Lancaster, Pa.
by The New Era Printing Company

Digitized by Google

THE TORREY BOTANICAL CLUB

OFFICERS FOR 1901

President,
HON. ADDISON BROWN.

Vice-Presidents,
T. F. ALLEN, M.D.
HENRY H. RUSBY, M.D.

Recording Secretary,
EDWARD S. BURGESS, PH.D.
Normal College, New York City.

Corresponding Secretary,
JOHN K. SMALL, PH.D.
Botanical Garden, Bronx Park, New York City.

Editor,
L. M. UNDERWOOD, PH.D.
Columbia University.

Treasurer,
H. B. FERGUSON, PHAR.D.
College of Pharmacy, 115 West 68th St., New York City.

Associate Editors.
NATHANIEL L. BRITTON, PH.D.
CARLTON C. CURTIS, PH.D.
MARSHALL A. HOWE, PH.D.
FRANCIS E. LLOYD, A.M.
DANIEL T. MACDOUGAL, PH.D.
HERBERT M. RICHARDS, S.D.
ANNA MURRAY VAIL.

Meetings the second Tuesday and last Wednesday of each month alternately at the College of Pharmacy and the New York Botanical Garden.

PUBLICATIONS. Bulletin. Monthly, established 1870. Price $3.00 per year. Of former volumes, only 1–6 and 19–27 can be supplied entire, but the completion of sets will be undertaken. All correspondence relating to the **Bulletin** and **Memoirs** should be addressed to Professor L. M. Underwood, Columbia University, New York City.

Memoirs. A series of technical papers published at irregular intervals, established 1889. Price $3.00 per volume.

Torreya. Monthly, established 1901. Price $1.00 per year. Address the Editor of Torreya, New York Botanical Garden, Bronx Park, New York City.

Digitized by Google

Vol. 2 No. 1

TORREYA

January, 1902

CONSERVATION OF ENERGY IN MYCOLOGICAL CLUBS

By Lucien M. Underwood

When the mycological club idea first swept over the country it was thought by some of the less sanguine that like many other fads the interest would soon die out, but the amount of vitality possessed by some of the clubs shows an increasing instead of a decreasing interest. And in some of the clubs certain of the members have done some most interesting work; not only have they made themselves familiar with numerous species in the field but they have also been led in some cases to make permanent records of the characters of these perishable plants. The amount of energy that is put forward in a summer by any one of these clubs is astounding when considered in the aggregate and if only conserved and turned toward the accomplishment of a single point or a few objective points would soon place us in possession of most valuable information relative to our fungus-flora. One of the most needed works is a descriptive manual small enough to be taken into the field for study and complete enough to contain all the known American species of the plants it attempts to describe and provided with usable keys or synopses that will surely lead rather than mislead the beginner. Of beginners' books we already have a sufficiency. To make possible such a work as suggested will involve time and patient work, but the small army of mycological club members could add very material contributions to such a work and hasten its preparation by following the lead of some suggestions. In order to accomplish this as any other task it will require a deal of patient labor on the part of collectors and a good deal of what has been called "dead work."

[The exact date of publication of each issue of Torreya is given in the succeeding number. Vol. 1, No. 12, comprising pages 137–156, was issued December 28, 1901.]

Digitized by Google

Our present knowledge of the higher flora has been brought to its present condition by the contributions of material from hundreds of individuals all over the country. A knowledge of our mycological flora must be brought about in the same way and none are in better condition to help in this matter than these clubs whose primary object is the study of these interesting plants. In order to direct the effort of these clubs so as not to waste energy I would suggest for the present year concentration of effort on certain definite groups of genera.

I would suggest some such series as *Boletus*, *Boletinus*, *Coprinus*, *Lactarius*, *Russula*, *Hygrophorus*, *Lentinus*, and *Marasmius*. Other generic groups need not be neglected but the principal effort might be directed to the above. They are: (1) Easily recognized genera, and (2) contain for the most part edible species, and (3) in most cases are in crying need of a good descriptive synopsis of species. The form of field notes suggested in the next article will take time and patience but will place us in possession of field data that could be obtained only by field workers.

Could the efforts of the clubs or of isolated individuals all over the country be directed toward these genera for one or two seasons and the results with the carefully preserved material be transmitted to a common center for collation and comparison it would serve as the basis of a fairly complete knowledge of the genera in question, their habits, variation, season, and distribution. Such combined effort would count in a single direction and results now scattered and often wasted would be saved and utilized for the help of others in the future.

COLUMBIA UNIVERSITY, January 1, 1902.

THE FIELD STUDY OF MUSHROOMS

BY F. S. EARLE

In no group of plants is careful study in the field so necessary as with the mushrooms, since their soft fleshy texture makes it impossible to prepare them for the herbarium in any way that will fully retain the characters of the fresh plant. In nearly all other groups of plants material hastily gathered and prepared in the

Digitized by Google

field can be studied at leisure in the herbarium almost as well as if it were in a fresh state. A dried mushroom, unless accompanied by full and carefully made field notes, is usually almost or quite worthless for purposes of identification or study. It is this fact more than any other that accounts for our present scanty and unsatisfactory knowledge of the mushroom flora of North America. It must not be inferred from the above that the dried specimens are useless, and can therefore be dispensed with. On the contrary, they should be prepared and preserved with great care, since they serve to interpret the descriptions, and, while not preserving fully the characters of the fresh plant, they do preserve some of them, and often besides develop quite good ones of their own. They should be dried quickly by fire-heat in a wire rack placed over a stove or lamp. They should then be stored in pasteboard boxes, and should not be moistened and pressed flat, as is sometimes advised. Before drying the plants, each lot should be carefully studied, and a full description drawn up of all the points likely to be useful in determining the species. This is time-consuming work, but upon its faithful performance the entire value of the collection will depend. In order to save time and to systematize the work, I have devised the following description-blank: *

Name	**Veil**
Habitat	**Annulus**
Habit	**Stipe**
Pileus	size
size	shape
shape	surface
color	color
surface	substance
margin	**Volva**
Lamellae	Flesh
attachment	color
number	changes
shape	taste
color	odor
spores	

* This is here printed in two columns merely to economize space; in Professor Earle's blank the printing stands in a single column.—ED.

Digitized by Google

When printed on slips 4½ x 8½ inches, and about fifty of them blocked together on a stiff pasteboard back, it makes a convenient pad to write on and to carry in the pocket. This blank has proved to be of great use not only in saving time but in unifying the descriptions and making them fully comparable one with another. Without some such guide and reminder one will surely omit, in writing a description, some of the above points, making a comparison of the descriptions very unsatisfactory. Even our best and most careful mycologists when writing descriptions for publication have failed in this uniformity as any one will testify who has attempted to construct keys to the species of the larger genera.

If the numerous people who are now interested in collecting the fleshy fungi would all adopt some such simple plan for unifying and preserving the results of their observations on these interesting plants there is no reason why our knowledge of them might not soon be as complete as it is of the flowering plants. The plan of using description-blanks for field study is not particularly new. Various other forms are in use by different workers. The exact form used is not important. The main thing is to adopt some simple plan that will enable the observer to record in each case all the characters that will be of use in the determination of the plant and the comparison of one species with another. Carefully dried specimens and faithfully drawn descriptions of the fresh plant are equally necessary for the proper representation of these plants in the herbarium. To be fully satisfactory these should be supplemented by photographs and by water-color sketches. It really excites the imagination to think of a large collection of these plants fully represented in each of these ways. For some purposes plants preserved wet, either in alcohol or formalin, would also be useful, but no liquid preservative has been found that is fully satisfactory and such a collection without notes would be no more useful than the dried plants alone.

NEW YORK BOTANICAL GARDEN, January 1, 1902.

Digitized by Google

THE "TENDRILS" OF THE KENTUCKY COFFEE-TREE

By Byron D. Halsted

Seeing the paper by Dr. MacDougal upon tendrils of *Entada scandens* leads me to bring to light the following note made some years ago.

Much to my surprise in examining some young leaves of the *Gymnocladus dioica* (L.), "tendrils" were found present in each case. The leaves of this leguminous plant are pinnately decompound, the sets of leaflets being in pairs although not usually opposite upon the common petiole. Between and above the uppermost pair there is a slender projection turned more or less to one side and an inch or so in length. There are similar appendages at the ends of the lateral pinnae.

In position and structure these appendages are tendril-like and as the *Gymnocladus* is a member of a family in which tendrils are not exceptional their presence here is not so surprising as might seem at first thought.

There is no apparent advantage in this structure to the plants now producing them and it becomes of only phylogenetic importance. It would seem, therefore, that at some time the ancestors of the *Gymnocladus* were truly tendril-bearing and it is to be inferred that they used them for clinging to supports. In becoming trees the members of this species lost the need of the tendril and the structure has become reduced to an abortive thread that seems useless and is evanescent. When a leaf has attained only a fraction of its full growth the vestige of the organ for clinging has disappeared.

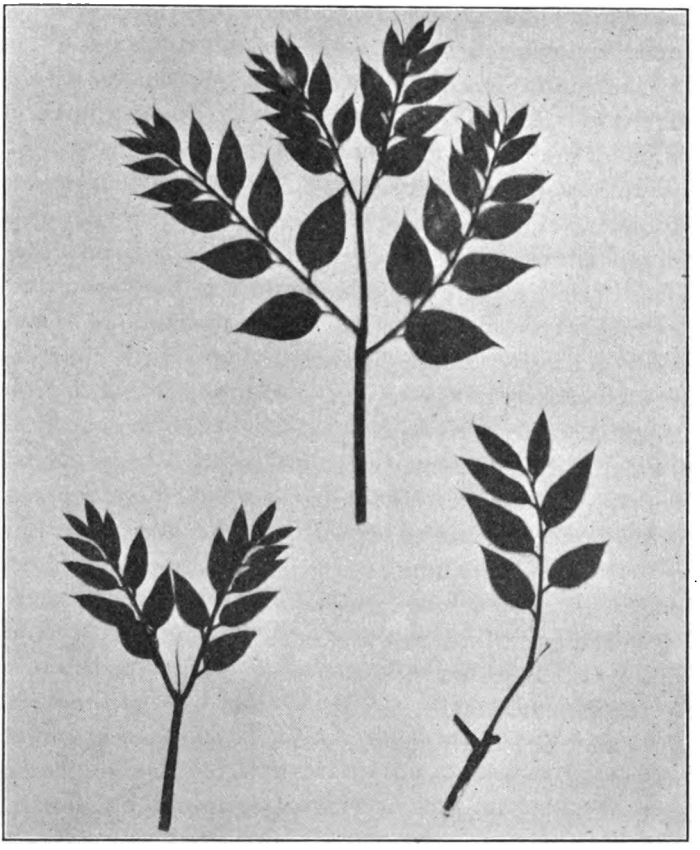
It seems absurd that a stately tree should have at any time anything that suggests clinging to an object of support; but viewed in the light of a vanishing appendage it is highly interesting and instructive.

The same thing is true of the Honey Locust (*Gleditsia triacanthos* L.) and perhaps also of other trees of the Leguminosae.

The picture herewith sent is a sun print of portions of young leaves in which the "tendrils" may be seen.

Digitized by Google

Doctor MacDougal suggests that these proiongations of the leaf-axes may possibly be considered as degenerate terminal leaf-



lets. It is not easy to decide what they are historically or that they are not useful now to the plants that bear them.

RUTGERS COLLEGE, November 27, 1901.

A NEW TIMBER FOR RAILROAD TIES

By H. H. RUSBY

It is reported that the Pennsylvania Railroad Company has arranged for a great innovation, in the use of tropical timbers for

Digitized by Google

railroad ties. The wood which has been selected for this purpose is the "Mora" of Venezuela and the adjacent regions, not that of Central America. The botanical identity of this Venezuelan Mora is not positive. I have collected it in the lower Orinoco region, but not in a condition for specific identification. It is certainly a member of the Rosaceae and probably in the genus *Parinarium*. A fine large trunk-section exists in the Economic Museum of the New York Botanical Garden. It grows as a large forest tree, sometimes very large indeed, being four or five feet in diameter. Like most tropical trees, it grows scattering rather than gregarious. The wood is extremely hard and heavy and the bark thin and very smooth, considering the size of the tree, there being very little fissuring or bork-formation. The outer color of the bark is of a medium to dark gray, mottled with lighter patches. The wood cuts rather readily when fresh but becomes exceedingly difficult to work after it is seasoned. In the latter state it takes a somewhat purplish tinge, to which its name "Mora" is due. It is not only hard, but tough and very durable. It is due to the last-named property that its use has been decided upon. It is said to endure for a period of fifty years. It is to be remembered, however, that this durability record relates to a tropical climate. It might be assumed that it could resist decay even longer in a temperate region where certain influences are not so active as in the tropics. Upon the other hand it is to be remembered that wood in the tropics is not subject to the sudden and severe changes of temperature which must be undergone by railroad ties in this country, and the effects of which upon this wood are quite unknown. The result of this trial will prove of the greatest interest. If successful, there is no reason why numerous other hard tropical woods possessing the same properties, a number of them growing in the same region with this Mora, cannot be similarly utilized. It is stated that the cost of these ties will be about $1.50 each, which is just about double that of the ties now in use, but it seems to the writer very doubtful if the expense of securing them will not be considerably greater than this estimate.

NEW YORK COLLEGE OF PHARMACY.

Digitized by Google

SOME NOTES ON THE DWARF MISTLETOE

By Clifton D. Howe

Until recently the known distribution of the dwarf mistletoe [*Razoumofskya pusilla* (Peck) Kuntze] was confined to a few stations, these being in New York, New Hampshire and Pennsylvania. These stations doubtless became known through the interest immediately stimulated by the discovery of the plant at Warrensburg, New York, in 1871, and by the subsequent description of it by Peck in 1873.* In 1898 and 1899, the range of this interesting parasite was extended by its discovery in Maine, Massachusetts and Vermont. The most northern station was Fort Kent, Aroostook County, Maine. An account of these discoveries with descriptions and notes upon its habitat was published in *Rhodora* for January, 1900.

Last summer, as a member of the New York Botanical Garden Expedition to Nova Scotia and Newfoundland, the writer found *Razoumofskya pusilla* at Pictou, Nova Scotia. The host was a small black spruce (*Picea Mariana* B.S.P.), growing on the edge of a pond in the woods about one mile from the sea. A month later, August 10, 1901, he discovered another station at Bay of Islands on the western coast of Newfoundland. The trees affected were in a sphagnous swamp on the top of a rocky hill abruptly rising about 400 feet from the bay. As in the former case, the host plant was the black spruce, but the parasite was much more abundant. Twenty spruces bearing conspicuous "witches' brooms" were counted on an area of less than a half acre. The trees were small, stunted and sickly in appearance. Some of them, apparently unable to endure the parasites, combined with an inhospitable climate, had succumbed before attaining their normal size.

The locality is about thirty miles from the open ocean, being at the head of the Bay of Islands near the mouth of the Humber River. Thus the plant is to some extent protected from the extreme exposure of the coast, while at the same time it has the environment of abundant moisture which seems most favorable

* Peck, C. H. Twenty-fifth Ann. Rep. on N. Y. State Mus. Nat. Hist. 69. 1873.

Digitized by Google

to its development. An unsuccessful search for *Razoumofskya* was made at other places in Newfoundland.

The station at the Bay of Islands is very near the 49th parallel of latitude. As *Razoumofskya pusilla* is one of the outlying representatives of a chiefly southern and tropical family, its occurrence so far north seems worthy of record.

DEPARTMENT OF BOTANY, UNIVERSITY OF CHICAGO.

SHORTER NOTES

A GEORGIA RHODODENDRON.—For nearly three quarters of a century a single specimen of a *Rhododendron* related to the Alleghenian *R. punctatum* has been preserved in the Columbia University herbarium. This specimen was collected in middle Georgia by Dr. Boykin, and nothing similar to it came to my notice until Mr. A. Cuthbert sent me specimens which he collected in the spring of 1901, from shrubs growing along the Savannah River, near Augusta, Georgia.

The most conspicuous external character of this species is the relatively long corolla-tube which in this case is longer than the lobes. In the case of *R. punctatum* the lobes of the corolla are longer than the tube. A striking feature of the plant is the corolla-limb with its broad crisped lobes, the upper lobe being copiously yellow-blotched. The corolla-lobes of *R. punctatum* are of an ovate type and perfectly flat along the edges. I shall call this species after Mr. Cuthbert and characterize it as follows:

Rhododendron Cuthbertii

A slender straggling shrub 2–3.5 m. tall, with resinous-scurfy foliage. Leaves mostly at the ends of the branches; blades leathery, elliptic, 3–13 cm. long, acute at both ends, or acuminate at the apex, more or less revolute, somewhat reticulated above, scurfy beneath; petioles 1–1.5 cm. long, more scurfy than the blades, rather stout: flower-clusters quite dense: pedicels 1–1.5 cm. long, clothed with pale scales: sepals ovate, 2 mm. long: corolla mainly of a clear rose tint with some yellow near the base; tube funnelform, rather abruptly expanded near the middle, fully 1.5 cm. long; limb 3–3.5 cm. broad, the lobes suborbicular or orbicular-reniform, truncate or subcordate at the base, crisped, the upper one copiously blotched: capsule 8–12 mm. long.

Digitized by Google

On river banks, middle and eastern Georgia. Spring.

The species grows abundantly on steep gneiss slopes along the Savannah River about seven miles above Augusta. Type in the herbarium of the New York Botanical Garden. J. K. SMALL.

A NEW MOURIRIA FROM PORTO RICO.—*Mouriria* Aubl. is a genus of Melastomaceae including about forty species, natives of continental tropical America and the West Indies. Of these *M. Domingensis* (Tussac) Spach, a tree with ovate pinnately-veined leaves is apparently frequent on Porto Rico, and five species are recorded from Cuba. The plant here noticed was first collected by P. Sintenis near Hatillo, and specimens with foliage only were distributed from the Berlin Herbarium annotated by Professor Urban as related to *M. spathulata* Griseb., a Cuban species.

M. spathulata is, however, a species with distinctly pinnately-veined leaves, and, as shown by Linden's no. 2147, is clearly different from the Porto Rico plant under consideration, which apparently finds its nearest known relative in *M. lanceolata* Griseb., also Cuban. The new species may be characterized as follows:

Mouriria Helleri.—A spreading shrub, 2–3 m. high, the slender branches light gray. Leaves oblong to oval, thick, bluish green, strongly 1-nerved, the few lateral veins very indistinct, obtuse at the apex, narrowed at the base, 2–3 cm. long, 1–1.7 cm. wide, the margins somewhat revolute; petioles about 1 mm. long: flowers solitary in the upper axils, few; pedicels 5–6 mm. long, 2-bracteolate at about the middle, the bractlets 1 mm. long, ovate, acute: berries orange-color, 1 cm. in diameter or more, fleshy, the persistent cup-shaped calyx with short broad acute lobes.

In sandy soil near a mangrove swamp, Cataño (Heller, no. 1372, in fruit, May 23, 1899; type); rocky places in the forest near Hatillo (Sintenis no. 6195, Dec. 2, 1877, foliage only).

N. L. BRITTON.

PROCEEDINGS OF THE CLUB

TUESDAY, NOVEMBER 12, 1901

This meeting was held at the museum, Botanical Garden, Bronx Park, at 3:30 p. m., Professor L. M. Underwood in the chair, 20 persons present.

Digitized by Google

On report of the committee on nominations, the name of Professor Charles E. Bessey was removed from the list of corresponding to that of active members.

The Club voted that beginning with January 1st, the Club meet each second Tuesday of the month at the College of Pharmacy at 8 p. m., and on each last Wednesday at 3:30 p. m. at the Botanical Garden.

The first paper was by F. S. Earle, on "*Ascocorticium* in North America," correcting the current nomenclature as to this genus.

The second paper, by Dr. Britton, "Remarks on the Flora of St. Kitts, British West Indies," was a sketch of his recent observations there, with a copious series of mounted specimens and of fruits and other specimens in formalin. Scarcely any botanical work had been done on St. Kitts previous to the explorations by Dr. Britton and Mr. John F. Cowell last summer. In all they collected about 3,500 herbarium specimens, representing perhaps half of the flora. Several tree-ferns were brought which are now making good growth, and a considerable number of cacti which are already on exhibition in the succulent house.

Dr. Britton spoke in particular of the great interest attaching to that purely tropical flora, the only plant familiar from our Atlantic coast being the introduced horseweed, *Leptilon*. St. Kitts is a volcanic mass, formed of a rugged central mountain rising to about 4,000 feet, dissected by radiating gorges which reach to the sea, and wholly surrounded by a fringe of arable land on the shore. Sides of steep ravines 300 feet deep were often completely covered with a prodigious growth of tree-ferns; there were four or five species in the ravines and one or two others more in the denser forests; some reached a height of 50 feet; one species was chiefly prostrate. A good number of the filmy ferns were found and several Gleicheniaceae at high altitudes, where ferns constituted the chief flora. No *Equiseta* were found; among the lycopods, a few specimens of *Psilotum* on tree-trunks, some large and handsome species of *Selaginella*, and three of *Lycopodium*, of which one conspicuous species was known to the negroes as "staghorn." The grasses number 30 or more, the largest a

Digitized by Google

Gynerium known as wild cane or dumb cane. Guinea-grass, *Panicum maximum*, is the entire source of hay. Sedges were few, for there is little standing water (except a littoral salt marsh), only a little pond near a mountain summit at 3,500 feet, and a little lake in the bottom of the old crater of the volcano, Mt. Misery. A *Scleria* with saw-edged leaves is an obstacle on mountain-trails.

Aroids are very conspicuous, and in great quantity, but only about 8 species; two of *Anthurium*, climbing trees, two of *Philodendron*, one with perforated leaves; one *Dieffenbachia;* and a species known as elephant's ears, forming great masses, with leaves sometimes five feet long.

Only two palms were found, one, a *Bactris*, reaching thirty feet; two species of *Commelina;* three or four species of *Tillandsia;* a *Dioscorea* with a remarkable purple leaf, now growing in the propagating house; about sixteen orchids; and one gymnosperm, a *Podocarpus* abundant high up, and known as "wild rosemary tree." Among higher plants the pepper family, the Papilionaceae and allies, *Euphorbia* and *Melastoma* families are numerous. The Compositae are also numerously present, but chiefly as weeds; a handsome new purple-flowered *Eupatorium* was found on the top of Mt. Misery forming a shrub eight to ten feet high. The alligator-pear, *Persea gratissima*, is quite abundant. There are four species of *Ficus*, a wild cherry, a *Viola*, etc. An introduced raspberry occurred in a mountain pasture at 2,000 feet. Among the more peculiar plants were the *Cecropia*, with white under surfaces of leaves, *Marcgravia* climbing appressed to trees to the height of fifty feet, and *Hillia*, interesting from its large lustrous white flowers.

The results of Dr. Britton and Mr. Cowell's expedition bid fair to prove of high economic importance aside from their scientific value. The expedition owed much to the kind assistance of the planters, who detailed their negroes and horses for the service of the explorers. Without such aid it would have been difficult to penetrate the forest-belt, through which trails had first to be cut.

Further remarks were added by Dr. Underwood, regarding a dodder in tops of trees in Porto Rico; by Mr. Barnhart, on a

Digitized by Google

Utricularia among the specimens exhibited from St. Kitts; by Mr. F. S. Earle on the few fungi collected; and by Mrs. Britton on the other cryptogams, which numbered 81, and included a *Vittaria* prothallium.

EDWARD S. BURGESS,
Secretary.

NEWS ITEMS

Professor W. J. Spillman, formerly of the Washington Agricultural Experiment Station, has been appointed Agrostologist of the U. S. Department of Agriculture to succeed Professor F. Lamson-Scribner, who has resigned to become Chief of the Insular Bureau of Agriculture in the Philippines.

The third annual meeting of the Botanists of the Central States was held at the University of Chicago, December 31, 1901, and January 1 and 2, 1902, in connection with the meeting of the American Society of Naturalists. The program, as announced, included twenty-seven botanical papers.

The seventh annual winter meeting of the Vermont Botanical Club will be held at the University of Vermont, Burlington, January 24th and 25th. The annual address is to be delivered by Professor B. L. Robinson, of Harvard University, his subject being "Some recent Advances in the Classification of the Flowering Plants." A full and interesting program is promised.

A case of "duplication of contributions" comparable with that referred to by Dr. MacDougal in TORREYA for November last is an article on "The Nomenclature of Lachnanthes," by James Britten, F.L.S., in the *Journal of Botany* for January, 1902. In this correction of current nomenclature, Mr. Britten traverses practically the ground covered by Mr. Roland M. Harper in his notes on the "Synonymy of Burmannia and Gyrotheca," published in TORREYA for March, 1901, and reaches the same results.

At the Nineteenth Congress of the American Ornithologists' Union, which met in New York City November 11–15, 1901,

Digitized by Google

Dr. J. A. Allen, Curator of the Department of Mammalogy and Ornithology of the American Museum of Natural History, read a suggestive paper on "The present Outlook for Stability in Nomenclature." He referred to the gradual acceptance of the methods of the American ornithologists by foreign ornithologists and also by American workers in other branches of the biological sciences.

Longmans, Green and Company have in press an "Elementary Plant Physiology" by Dr. MacDougal, which is intended to replace the "Experimental Plant Physiology" by the same author published by H. Holt and Company in 1895. The first-named company has purchased all the rights of the older book and destroyed the plates, and the edition is entirely exhausted. The new text will present the subject in its simplest technical aspect, and will be uniform in method of treatment with the more advanced Practical Text-Book of Plant Physiology published in 1901.

Dr. Charles Mohr's "Plant Life of Alabama" has been soon followed by "The Flora of Tennessee" written by Augustin Gattinger, M.D., and published by the State of Tennessee through its Bureau of Agriculture. This work consists of an annotated list of the Pteridophytes and Spermatophytes of Tennessee, preceded by an account of the regional distribution of the plants of the State and by a preface containing much interesting autobiographical matter, the whole being followed by the "Philosophy of Botany," a historical sketch of the development of the science from the earliest times.

From the income of the Olivia and Caroline Phelps Stokes Fund for the Protection of Native Plants, the New York Botanical Garden has offered three prizes of $50, $30 and $20, each, for the best essays upon the preservation of wild plants, including shrubs, herbs and trees. Such essays must not exceed three thousand words in length, must be clearly written or type-written in triplicate, and are to be submitted to the Director-in-Chief not later than February 1, 1902. The successful essays are to be published first in the *Journal* of the Garden, separates being

Digitized by Google

printed for gratuitous distribution to all interested. Republication of the prize essays in other journals, magazines and newspapers is to be invited.

The Society for Plant Morphology and Physiology held its fifth annual meeting at Columbia University, on December 31, 1901, and January 1, 1902. The following papers and reports were presented: Artificial changes affecting the Vegetation of the Huron River, *Professor V. M. Spalding*, University of Michigan; A floating tropical botanical Laboratory (illustrated), *Dr. John W. Harshberger*, University of Pennsylvania; The Physiology of Sea-water, *Dr. Rodney H. True*, Department of Agriculture; On the Teaching of Plant Physiology to large elementary Classes, *Professor W. F. Ganong*, Smith College; Discussion upon the most profitable Relation of the American botanical Societies to one another, opened by *Dr. D. T. MacDougal*, New York Botanical Garden; Report of the Committee on the Botanisches Centralblatt, *Professor W. G. Farlow*, Harvard University, Chairman; On the Teaching of Vegetable Pathology, *Dr. Hermann von Schrenk*, Shaw School of Botany; A Disease of the American Ash, *Dr. Hermann von Schrenk;* The Destruction of Cell Walls by Bacteria, *Dr. Erwin F. Smith.*, Department of Agriculture; Observations on the Bacterial Rot of the Calla Lily, *Dr. C. O. Townsend*, Department of Agriculture; Germination of Basidiomycetous Spores, *Dr. Margaret C. Ferguson*, Wellesley College; Vegetative Reproduction in Leptolejeunea, *Professor A. W. Evans*, Yale University; Observations on Pterygophora, *Professor Conway MacMillan*, University of Minnesota; Notes on new species of Lichens collected by the Harriman Expedition, *Professor Clara E. Cummings*, Wellesley College; What is the Archesporium? *Professor F. E. Lloyd*, Columbia University; The Embryology and Germination of the Genus Peperomia, *Professor Duncan S. Johnson*, Johns Hopkins University; Report of the Committee on the Standard College Entrance Option in Botany, *Professor W. F. Ganong*, Smith College, Chairman. For the afternoon of January 1, the Society adjourned to the New York Botanical Garden where the museums, laboratories, and conservatories were inspected. The sessions were brought to a close with a dinner,

Digitized by Google

at which the retiring President, Dr. Erwin F. Smith, delivered the presidential address upon "Plant Pathology: A Retrospect and Prospect." For the ensuing year, Professor V. M. Spalding was elected President; Professor Byron D. Halsted, Vice-President; and Professor W. F. Ganong, Secretary-Treasurer.

The Society's committee on securing better reviews of botanical literature reported upon the organization of the Association Internationale des Botanistes and the purchase of the Botanisches Centralblatt by this Association. The Centralblatt, under the new management, is published by the firm of E. J. Brill, in Leyden, with Dr. J. P. Lotsy as acting editor-in-chief. The American representatives upon the editorial staff, with their respective departments, are as follows:

Phanerogams (systematic) and Chairman of the American Board, Professor William Trelease, Missouri Botanical Garden, St. Louis.

Morphology, Professor D. H. Campbell, Leland Stanford Junior University, California.

Cytology, Dr. C. J. Chamberlain, University of Chicago.

Physiology, Professor D. T. MacDougal, New York Botanical Garden, Bronx Park, New York City.

Algae, Dr. G. T. Moore, U. S. Department of Agriculture, Washington, D. C.

Paleontology, Professor D. P. Penhallow, McGill University, Montreal.

Fungi, and Secretary of the American Board, Dr. Hermann von Schrenk, Shaw School of Botany, St. Louis.

In order to facilitate the work of the editors, it is urged that authors send copies of their papers as soon as published to the editor in charge of the department concerned. The annual fee for membership in the Association is twenty-five shillings, all members receiving the Centralblatt *gratis*. The subscription price of the Centralblatt to non-members is twenty-eight shillings. Reviews are to be published in English, French or German. The first number of the Centralblatt issued by the new board of editors bears the date of January 3.

Digitized by Google

Digitized by Google

OTHER PUBLICATIONS

OF THE

TORREY BOTANICAL CLUB

(1) BULLETIN

A monthly journal devoted to general botany. Vol. 28, published in 1901, contained 706 pages of text and 49 full page plates. Price $3.00 per annum. For Europe 14 shillings. Dulau & Co., 37 Soho Square, London, are agents for England.

Of former volumes, only 1–6 and 19–28 can be supplied entire from the stock in hand, but the completion of sets will be undertaken. Yearly volumes 1–5 (1870–1874), one dollar each. Vol. 6 (1875–1879), extending over five years, is furnished at the subscription price of five dollars. Vols. 19–27 (1882–1900) are furnished at the published price of two dollars each; Vol. 28, three dollars.

Single copies (30 cts.) will be furnished only when not breaking complete volumes.

(2) MEMOIRS

The MEMOIRS are published at irregular intervals. Volumes 1–7 and 9 are now completed and Nos. 1 and 2 of Vol. 8 and No. 1 of Vol. 11 have been issued. The subscription price is fixed at $3.00 per volume in advance. The numbers can also be purchased singly. A list of titles of the individual papers and of prices will be furnished on application.

(3) **The Preliminary Catalogue of Anthophyta and Pteridophyta** reported as growing within one hundred miles of New York, 1888. Price, $1.00.

Correspondence relating to the above publications should be addressed to

THE TORREY BOTANICAL CLUB
Columbia University
NEW YORK CITY

Digitized by Google

Vol. 2 April, 1902 No. 4

TORREYA

A Monthly Journal of Botanical Notes and News

EDITED FOR
THE TORREY BOTANICAL CLUB
BY
MARSHALL AVERY HOWE

JOHN TORREY, 1796–1873

CONTENTS

Additions to the recorded Flora of Long Island: A. J. Grout 49
A Key to the North American Genera and Species of the Hygrophoreae—I: F. S. Earle 53
Shorter Notes
A Saxifrage from the Queen Charlotte Islands and its Relatives: J. K. Small 55
Reviews
MacDougal's Elementary Plant Physiology: C. C. Curtis 56
Proceedings of the Club: Edward S. Burgess 58
News Items 62

Published for the Club
At North Queen Street, Lancaster, Pa.
by The New Era Printing Company

Digitized by Google

THE TORREY BOTANICAL CLUB

OFFICERS FOR 1902

President,

HON. ADDISON BROWN, LL.D.

Vice-Presidents,

T. F. ALLEN, M.D.

HENRY H. RUSBY, M.D.

Recording Secretary,

EDWARD S. BURGESS, PH.D.
Normal College, New York City.

Corresponding Secretary,

JOHN K. SMALL, PH.D.
Botanical Garden, Bronx Park, New York City.

Editor,

L. M. UNDERWOOD, Ph.D.,
Columbia University.

Treasurer,

FRANCIS E. LLOYD, A.M.
Columbia University.

Associate Editors,

NATHANIEL L. BRITTON, Ph.D.
CARLTON C. CURTIS, Ph.D.
MARSHALL A. HOWE, Ph.D.
FRANCIS E. LLOYD, A.M.
DANIEL T. MACDOUGAL, Ph.D.
HERBERT M. RICHARDS, S.D.
ANNA MURRAY VAIL.

TORREYA is furnished to subscribers in the United States and Canada for one dollar per annum; single copies, fifteen cents. To subscribers elsewhere, five shillings, or the equivalent thereof. Postal or express money orders and drafts or personal checks on New York City banks are accepted in payment, but the rules of the New York Clearing House compel the request that ten cents be added to the amount of any other local checks that may be sent. Subscriptions are received only for full volumes, beginning with the January issue. Reprints will be furnished at cost prices. Subscriptions and remittances should be sent to Treasurer, Torrey Botanical Club, 41 North Queen St., Lancaster, Pa., or Columbia University, New York City.

Matter for publication should be addressed to

MARSHALL A. HOWE
New York Botanical Garden
Bronx Park, New York City

Digitized by Google

Vol. 2 No. 7

TORREYA

July, 1902

THE ORIGIN OF SPECIES BY MUTATION*

By D. T. MacDougal

Admitting for the sake of the present discussion the validity of the results obtained by de Vries, the following general laws may be deduced from a consideration of the experimental observations recorded by him:

1. New elementary species may originate suddenly, without transition or intermediate forms between them and their immediate ancestors. The new species actually originate in the formation of the seeds, but are born, figuratively speaking, at the time of the germination of the seeds, and become recognizable in many instances as soon as the earlier leaves have unfolded.

2. The newly arisen species are constant from the moment of their origin, and a species is not to be considered as an arbitrary group but as consisting of a number of individuals conforming, within the limits of the fluctuating variations, to a sharply defined type.

3. The new forms arising in the experimental investigations were sufficiently divergent from the parents to be assigned specific rank, and might not be classed as varieties of the parent types.

4. The characters of the newly derived species show no resemblance to the individual variations exhibited by the parent type, being in fact qualitative rather than quantitative divergences. Special emphasis is to be laid upon this point, from which it would seem that species do not appear by gradual differentiations among plants growing wild in response to environmental stimuli,

*Continued from page 84.

[The exact date of publication of each issue of TORREYA is given in the succeeding number. Vol. 2, No. 6, comprising pages 81–96, was issued June 12, 1902.]

Digitized by Google

the most striking instances from four to six inches in three feet. According to Leavitt, the longest horizontal distance of flight measured by him was 25 inches, though he adds: "The range of the trajectory *may* be three or four feet, *at the greatest.*" (Italics mine.)

Now, assuming that the normal range of flight for these gemmae is three feet, and that they fall only four inches in that distance, which gives us very favorable data for an estimate, the gemmae shot out from the 'up side' of a plant growing on a slope with one foot rise in three, would reach a distance of only about sixteen inches, measured on the slope, even if we assume a horizontal flight. If the plant be tilted so that its axis is at right angles to the slope, the force which would carry the gemma to a distance of three feet, with a vertical rise of one foot, would carry the object approximately six feet, horizontal distance, a conclusion quite at variance with the observed facts.

It would seem strange, too, that the gemmae which Leavitt saw were to be found only in *one* direction from the nearest adult plants as it is well enough known that they grow out in various positions on the stems.* An examination of these plants would have shown the basal parts of the gemmiparous branches, and Leavitt's conclusion may thus have been tested. To be sure, there is also the possibility that the conditions in other directions were not favorable for germination; but in the absence of definite evidence to the contrary we must assume that they were. There is, therefore, a considerable degree of probability that the plantlets referred to had some other origin.

Finally, the supposition that in order to initiate the propulsion of the gemma it must be struck by some moving object, may be beyond the facts. We may as justifiably assume that the mechanism is complete in itself, and that the tensions set up in the clasping leaves are sufficient to cause the phenomenon. Our observations touching this point are incomplete, and it is therefore better to hold the judgment in abeyance.

Movements of Leaflets in Onoclea sensibilis.—The statement

* Goebel has pointed out in the Organography (p. 651) that the gemmae do not grow on the side of the stem turned toward the sister stem of a fork but this, of course, does not affect our statement.

Digitized by Google

made by Amos Eaton in his botany published in 1824, that the leaflets of *Onoclea* "slowly approach each other on squeezing the stem with the hand," * prompted me to determine, if possible, what basis of fact there might lie beneath it.

Accordingly an attempt was made, in rather crude fashion, to be sure, to determine whether there was any movement rapid enough for ready observation. I was encouraged to do this by the experience which I had in noticing that the lowermost leaflets did approach each other sensibly within a period of ten minutes after plucking.

A series of experiments was carried out by cutting off the petioles of the leaves desired close to the ground, and pouring on water to prevent the entrance of air into the tissues in the event of negative pressure. Some were then measured by taking the distance between the tips of the bottom pair of leaflets, and between the tip of one of these and the apex of the leaf. The latter measurement proved of no value, since the twisting of the whole leaf vitiated the results. After measurement a few were allowed to stand in water, and others allowed to dry, and in the latter the movement of the leaflets was usually to be noted in five minutes although in some cases negative results only were obtained. Those remaining in water, on the other hand, usually remained fresh and showed no movement. The measurements of a few cases of leaves allowed to remain out of the water are given.

Time	9.55	10	10.02	10.15	10.55
Distance between tips of leaflets in inches.	2⅝ 3¾	2⅛ 3½	2 3½	1⅝ 3⅜	⅞ 2½
Time.	10.40	10.45	10.50	11.30	
Distance between tips of leaflets in inches.	2¾ 3⅛ 3½	2⅝ 2⅞ 3¼	2½ 2¾ 3⅛	1½ 1¾ —	

* My attention was drawn to this statement of Eaton's by a paragraph, written by Miss B. L. Putnam in the Fern Bulletin, 7 : 15. Ja. 1899.

Digitized by Google

It appears from the experience of the writer, that the lower leaflets show a good deal of movement and that such movement is due to the rapid wilting of the leaf. There is a curious feature of the phenomenon, however, in the fact that the lessening of the distance between the leaflet tips is not due to a general curvature in those parts, at least in the early part of the process, but rather to a more local, and therefore stronger, curvature at the base of each leaflet.

The matter would seem not unworthy of further examination. We still are unable to answer the curious in regard to the origin of the specific name; nevertheless, that the leaf is "sensitive" appears doubtless true. "Squeezing the stem" has, however, nothing to do with it.

Spore Expulsion in Webera (*Diphyscium*) *sessilis.* — The peculiar, dorsiventral form assumed by the sporogonium of this plant is, according to Goebel, assumed under the influence of one-sided illumination. This was shown by cultivating the young sporogonia, which are radially symmetrical under appropriate conditions. The same author explains the form of this organ teleologically as an arrangement by which the dissemination is facilitated by falling raindrops.*

By tapping the upper side of a dry ripe capsule with a pencil point the action of the raindrop falling upon it may be imitated. In this way I have been able to see a puff of spores shot out very rapidly to a distance of two inches. Doubtless the natural conditions result still more favorably. The behavior is sufficiently striking, however, as it stands.

A KEY TO THE NORTH AMERICAN SPECIES OF CORTINARIUS.—II†

By F. S. Earle

INOLOMA

1.	Lamellae at first white or pallid.	2.
	Lamellae at first violaceous (as also the stipe and cortina).	4.
	Lamellae at first yellow, red, or cinnamon.	11.

* Organography (translation), p. 237.

† Continued from page 172.

Digitized by Google

2. Stipe colored like the pileus, hollow. *C. modestus* Pk.
Stipe white. 3.

3. Pileus subferruginous; lamellae crowded. *C. caespitosus* Pk.
Pileus whitish, then reddish-yellow; lamellae subdistant. *C. canescens* Pk.

4. Pileus light bluish or lilac. 5.
Pileus dark bluish, violet or purple. *C. violaceus* (L.) Fr.
Pileus no shade of blue or violet. 6.

5. Stipe strongly bulbous. *C. lilacinus* Pk.
Stipe subconic or clavate, not bulbous. *C. albo-violaceus* (Pers.).

6. Stipe light-colored or whitish, at least below. 7.
Stipe darker, sub-concolorous. 9.

7. Pileus grayish or whitish tinged with red. 8.
Pileus brownish-gray. *C. erraticus* Pk.

8. Pileus nearly white; lamellae bright deep violet. *C. pulchrifolius* Pk.
Pileus darker; lamellae dingy violet. *C. rubro-cinereus* Pk.

9. Pileus scaly. 10.
Pileus silky-fibrillose, reddish-brown. *C. Clintonianus* Pk.

10. Pileus fawn-color with blackish scales. *C. pholideus* Fr.
Pileus ochraceous with brown scales. *C. asper* Pk.

11. Pileus yellow or ochraceous. 12.
Pileus cinnamon or ferruginous. 13.
Pileus red or reddish-brown. 14.

12. Pileus smooth. *C. ochraceus* Pk.
Pileus squamulose. *C. annulatus* Pk.

13. Pileus nearly smooth. *C. Catskillensis* Pk.
Pileus densely fibrillose-squamulose. *C. squamulosus* Pk.

14. Pileus smooth, glabrous. *C. robustus* Pk.
Pileus fibrillate. 15.

15. Flesh pallid; odor of radishes. *C. craticius* Fr.
Flesh white; odor none. *C. autumnalis* Pk.

TELAMONIA

1. Lamellae thick, rather distant; stipe spongy or fibrous. Section *Platyphylli*.
Lamellae thin, narrow, crowded; pileus thin; stipe hollow, subcartilaginous. Section *Leptophylli*.

Platyphylli

1. Stipe and veil white. 2.
Stipe and lamellae violet, cortina light violet, veil white. 6.
Stipe and veil red or yellow; lamellae cinnamon. 7.
Stipe brown; lamellae dark, brownish. 9.

2. Pileus pale gray. *C. griseus* Pk.
Pileus dark brown. 3.

3. Lamellae at first ferruginous. *C. gracilis* Pk.
Lamellae at first yellow. 4.

4. Stipe solid. *C. flavifolius* Pk.
Stipe stuffed or hollow. 5.

Digitized by Google

5.	Pileus conic to convex, umbonate.	*C. badius* Pk.
	Pileus convex to expanded.	*C. castaneoides* Pk.
6.	Pileus violaceous to brick-red.	*C. torvus* Fr.
	Pileus violaceous to grayish-red.	*C. torvus nobilis* Pk.
7.	Lamellae linear; pileus bay or brick red.	*C. Robinsonii* Mont.
	Lamellae broad.	8.
8.	Stipe yellow.	*C. paludosus* Pk.
	Stipe reddish, or whitish with two to four red zones.	*C. armellatus* (A. & S.) Fr.
9.	Lamellae purplish-brown; pileus dark brown to pallid.	*C. adustus* Pk.
	Lamellae brown or yellow-brown.	10.
10.	Stipe long, 5–8 cm.; pileus bay-brown to fulvous.	*C. distans* Pk.
	Stipe shorter, 2½–5 cm.; pileus fuscous to ochraceous.	*C. furfurellus* Pk.

Leptophylli

1.	Stipe white or pallid.	2.
	Stipe violescent.	*C. subflexipes* Pk.
	Stipe brown.	3.
2.	Pileus blackish chestnut, paler when dry.	*C. nigrellus* Pk.
	Pileus watery cinnamon, paler when dry.	*C. lignarius* Pk.
3.	Pileus densely fibrillate.	*C. hemitrichus* (Pers.) Fr.
	Pileus canescent, then glabrate and rimose.	*C. iliopodius* (Bull.) Fr.

DERMOCYBE

1.	Lamellae at first white or pallid.	2.
	Lamellae at first violet or purple.	5.
	Lamellae at first yellow, red or cinnamon.	7.
	Lamellae at first dark brown or olivaceous.	13.
2.	Pileus white or pallid.	3.
	Pileus dark brown.	4.
3.	Lamellae crowded.	*C. ochroleucus* (Schaeff.) Fr.
	Lamellae subdistant.	*C. albidifolius* Pk.
4.	Pileus subglabrous.	*C. sericeps* Pk.
	Pileus with minute brown scales.	*C. tigrinus* Johns.
5.	Pileus grayish-violet when young.	6.
	Pileus argillaceous.	*C. brevissimus* Pk.
	Pileus dark reddish-brown.	*C. anomalus* Fr.
6.	Lamellae subcrowded.	*C. simulans* Pk.
	Lamellae distant.	*C. rimosus* Pk.
7.	Lamellae and cortina red.	8.
	Lamellae yellow or brown.	9.
8.	Entire plant cinnabar red.	*C. cinnabarinus* Fr.
	Entire plant blood red.	*C. sanguineus* (Wulf.) Fr.
9.	Pileus yellow.	*C. luteus* Pk.
	Pileus dark chestnut.	*C. castanellus* Pk.
	Pileus cinnamon or tawny brown.	10.
10.	Cortina forming a webby basal annulus.	*C. basalis* Pk.
	Cortina not forming a basal annulus.	11.

Digitized by Google

11.	Spores large, 11–13 $\mu \times$ 4–5 μ.	*C. aurifolius* Pk.
	Spores smaller, 7–8 $\mu \times$ 4–6 μ.	12.
12.	Stipe long, 5–8 cm.	*C. cinnamomeus* (L.) Fr.
	Stipe short, 1½–2½ cm.	*C. Sintenisii* Bres.
13.	Stipe white.	*C. appendiculatus* Johns.
	Stipe concolorous.	*C. lutescens* Pk.

HYDROCYBE

1. Pileus somewhat fleshy, margin incurved when young; stipe attenuate above. Section *Firmiores.*

   Pileus submembranous, margin straight from the first; stipe subcylindric or attenuate below. Section *Tenuiores.*

Firmiores

1.	Stipe white, cortina colored like pileus.	2.
	Stipe and lamellae violaceous.	3.
	Stipe and subobsolete veil yellow or reddish.	4.
	Stipe brown; cortina white or pallid; lamellae dark.	5.
2.	Lamellae at first pallid.	*C. armeniacus* (Schaeff.) Fr.
	Lamellae at first violaceous.	*C. regularis* Pk.
3.	Stipe smooth, glabrous.	*C. castaneus* (Bull.) Fr.
	Stipe fibrillose.	*C. fusco-violaceus* Pk.
4.	Small; pileus 1–2 cm.; in pastures.	*C. vernalis* Pk.
	Larger; pileus 2½–4 cm.; in woods.	*C. pulcher* Pk.
5.	Small; pileus 1–3½ cm.; on ground in woods.	*C. praepallens* Pk.
	Large; pileus 10 cm.; on logs.	*C. rubidus* Mont.

Tenuiores

1.	Pileus bay-brown, disc darker.	*C. decipiens* (Pers.) Fr.
	Pileus pale alutaceous, darker when dry.	*C. pallidus* Pk.
	Not able to place	*C. venosus* Johns.

NEW YORK BOTANICAL GARDEN.

PETIOLATE CONNATION IN TRIFOLIUM PRATENSE

BY CHARLES A. WHITE

Among the autumn stools of *Trifolium pratense* growing upon my house-lot in Washington I discovered in October last a leaf consisting of five leaflets and an unusually strong petiole. It was the fifth and innermost one of the five leaves which were then borne upon one of the six sprouts constituting the stool. All the other leaves of that stool, and all those of the many other stools which I examined bore only the normal number of three leaflets each. Supposing this leaf to have been a foliate variation similar to that which has become the race character of Professor

Digitized by Google

de Vries's *T. pratense quinquefolium*, I potted the whole stool upon which it grew for further observation. The following remarks, however, refer only to the leaves of that sprout which bore the leaf with five leaflets just mentioned. A few days after the plant was potted a new leaf, number 6, appeared from between the infolded stipules of number 5 and upon the same side of the axis of the sprout. This leaf consisted of six leaflets and, like number 5, it had a strong petiole with a shallow median groove along its upper side; and a cross section showed that the internal canal was double. Number 7 soon came out on the opposite side of the sprout and bore only three leaflets. Number 8 came out on the same as numbers 5 and 6, bearing six leaflets upon a petiole like that of each of those numbers. Only these three abnormal leaves appeared and they were preceded and followed by normal leaves on the sprout that bore them. The structure of the petiole of each plainly shows connation, and it necessarily follows that the leaflets in excess of three were not supernumeraries, but normal leaflets of one of the two petioles which are thus represented. The double character of these three petioles was easily traceable from the leaflets to the stipules but there it disappeared, and I found no trace of duplication of the stipules. The connation in number 6 extended to the two middle petiolules of the leaflet cluster and also to the lower part of the two leaflet blades which they bore; but in numbers 5 and 8 all the leaflets and petiolules were fully separate. I assume that one of the leaflets of number 5 was aborted. These three abnormal leaves are evidently monstrosities and not such cases of true multiplication of leaflets as occur in *T. pratense quinquefolium* and in ordinary four-leafed clover. The leaves here referred to, numbers 5, 6, 7, and 8, are preserved in the herbarium of the U. S. National Museum.

WASHINGTON, D. C.,
November, 1902.

REVIEWS

A new Index to Botanical Literature

Under the auspices of the Royal Society of London, an International Catalogue of Scientific Literature was begun with the opening of the twentieth century. The first issue of Section

Digitized by Google

M, Botany, for 1901 has just been received, though it is dated May 1902. It is a small octavo of 378 pages giving: (1) An author's catalogue in which the titles of something like 2,100 botanical papers issued during last year are listed, followed by (2) A subject catalogue in which the same titles appear under one or more topics arranged on a numerical system which is practically a reclassification of the Dewey system with the points omitted. Under each of the major divisions of the subject Taxonomy occur lists of new species published in the papers cited.

As the Society announces the further issuance of a second part during the year to complete the record of the world's botanical literature for 1901, they have for the present disarmed criticism along a very important line, namely completeness. As the annual output of botanical literature during the past decade has ranged from 5,000 to 8,000 titles, it will be necessary for the second part to be considerably larger than the present one. Taking a random half dozen well-known American contributors whose titles for 1901 have been published elsewhere, the present volume gives less than one half of their contributions to botany, and for some not over one third of them.

The enormous work entered upon by the Society can better be seen when we learn that botany is only one of the seventeen subjects whose literature is being listed in this series of publications.

The strongest criticism that can be made on the system aside from the question of completeness is that it is a book instead of a card catalogue. When, for example, the year 1925 is reached, not to look farther into the future, one will be obliged to consult twenty-five individual author catalogues to find a given article by any desired author unless its exact date is known in advance. One will be obliged to consult the same number of subject catalogues to find the summary of literature on any one subject, as, *e. g.*, the Hepaticae, for the period covered. Until the European library system attains the efficiency of the American in adopting the standard card catalogue, such a publication may involve practical difficulties, but it is the only

Digitized by Google

solution of the index problem. The literature relating to American botany has now been indexed since 1894 on the card system; by purchasing duplicate cards each library can adopt the subject catalogue suited to its own needs which are sure to vary according to the size, purpose, and character of the library. Under the card system, however long the index is continued, there will be simply one place to search for any paper by any author; the example of Just's Jahresbericht, hitherto our most valuable index for the world's literature, has demonstrated the practical inutility of the annual volume as an index guide. Life is too short to be forced to waste time consulting annual volumes when there is an infinitely simpler way. LUCIEN M. UNDERWOOD.

PROCEEDINGS OF THE CLUB

TUESDAY, OCTOBER 14, 1902

The meeting was held at the College of Pharmacy; 13 present; Dr. Britton in the chair.

The scientific program consisted of informal reports of summer work and observations.

The secretary spoke of his collections of asters, also of *Euphrasia* and other alpine plants in the White Mountains. Discussion regarding Wettstein's monograph of *Euphrasia* followed.

Professor Lloyd reported various observations made during the summer, which are being published in the current numbers of TORREYA.

Dr. Tracy E. Hazen reported observations about St. Johnsbury, Vt., on the black maple, *Acer nigrum*. He maintained its specific distinctness from the sugar maple. Dr. Britton confirmed its distinctness as seen in other parts of western New England and in western New York. Its leaves are darker beneath and are said to expand about two weeks later in spring, its fruit is much larger and there seems to be a difference in the angle of divergence of the keys.

Miss F. A. Mulford spoke of the flora of the Hempstead plains, on Long Island, remarking on certain similarities to that of Kansas.

Digitized by Google

Miss Mary E. S. Davidson reported observations when at Wood's Hole this summer, upon an interesting green fungus, new to that region, a *Lactarius*.

Miss Catharine Murray spoke of her visit to the botanical gardens at Kew, Brussels, Paris, etc.

Mr. Eugene Smith, Miss L. K. Lawall, and others, spoke of a number of localities for the fringed gentian near New York, and of an increased attendance upon the summer excursions.

Dr. MacDougal remarked upon the dissimilarity of the alpine conditions of the Rockies from those of the White Mountains. Tracts which in July in the rains of the White Mountains are covered merely with green would have been blazing with flowers if in the Rockies.

Dr. Underwood spoke of the recognition among farmers about Redding, Ct., of two types of the sweet flag, *Acorus Calamus* L., that with a white root being in favor, that with a red root being smaller and somewhat bitter, and with young leaves of a different tone of color.

Dr. Underwood also mentioned his finding young plants of the date-palm coming up in railway rubble at South Norwalk, Ct.; similarly observed on garbage-heaps about New York by Mr. Eugene Smith. He spoke also of the successful cultivation on a lawn at Danbury, Ct., of our native orchid *Cypripedium reginae* Walt., where in four years a cluster of three or four plants has increased to forty.

Dr. Underwood also referred to the Torrey Club's Fourth of July excursion, when the Botanical Club of Syracuse provided generous entertainment. The saline plants about Onondaga Lake are disappearing and the refuse from the soda-ash process is gradually filling up the lake. Where such plants as *Salicornia* once occurred by the acre, there are now but few plants remaining.

He referred also to his finding that *Botrychium neglectum* and *B. lanceolatum* still survive in the original locality where he first found these small species some twenty-five years ago.

Mrs. Britton reported upon observations on an interesting *Vittaria* brought by Dr. Evans from Porto Rico; and upon forms of *Stachys* found by her on Hempstead Plains in Long Island.

Digitized by Google

In a white cedar swamp there she observed the newly recognized fern *Dryopteris simulata* growing in great masses and abundantly distinct.

Mrs. Britton spoke also of certain instances of new habit assumed by mosses on adopting a new habitat as in a *Leptodon* usually on trees, latterly found in tufts on dry rocks; and in case of *Porotrichum Alleghaniense*, at Green Lake, Jamesville, New York, an aquatic form surviving the desiccation of the rock surfaces, and now assuming the habit of a *Climacium*.

Dr. Britton, whose summer was largely given to administrative work, secured time for attendance upon the Association meetings at Pittsburg, and for prosecution of his studies on the Cyperaceae and the Crassulaceae at Kew. Nearly half of the known species of North American Crassulaceae are now growing in Washington or at the New York Botanical Garden, a necessary preliminary to proper descriptive work with these plants. The fleshy foliage and calyx require description from the life, not, as often hitherto, from herbarium specimens. Many of the numerous Mexican Crassulaceae are very local, and known only from one or two localities.

Discussion followed upon the effects of the prolonged wet weather of the present season, Dr. Hazen remarking upon sedges in Vermont which are usually stiff but this year were very long and decumbent.

EDWARD S. BURGESS,
Secretary.

WEDNESDAY, OCTOBER 29, 1902

The meeting was held at the Botanical Garden at 3:30 P. M.; 20 persons present; Dr. MacDougal in the chair.

Professor D. S. Johnson, of the Johns Hopkins University, was elected to active membership.

Two resignations were accepted: Mrs. Francis S. Parsons, Albany, and Miss Mary T. Pitman, Providence.

The scientific program followed: The first paper presented was by Miss F. A. Mulford, "Remarks on *Gerardia decemloba*, Greene, with exhibition of specimens." The plant was found at Hempstead, Long Island, September 5, 1902. This is the second station for the species; it was first found by Professor

Digitized by Google

Greene at Washington, D. C., in 1898. Dr. Britton followed with remarks upon the peculiar physiography of the Hempstead plain, its isolation, and the lack of trees, which is perhaps due to fires.

The second paper was by Miss Anna Murray Vail on "Some rare Books recently added to the Library of the New York Botanical Garden." This will shortly appear in the *Journal of the New York Botanical Garden.* Among some 400 works of the older botany recently procured, and now exhibited to the Club, the oldest is a fifteenth century MS. of Macer Floridus *De virtutibus herbarum,* in Gothic letters. The oldest printed volume is one of the Ortus Sanitatis, from the end of the fifteenth century; the next, the Venice edition of 1509 of the *Aggregator practicus,* one of the herbals often known simply as *Herbarius.* Later notable works secured, include many of those of Mattioli, Dodoens, and Lobel; the rare first volumes issued by Dodoens (his *De frugum Historia,* 1552) and by Clusius (1557); also a copy of Clusius' greatest work, his *Rariorum* of 1601, of special interest because a presentation copy from Clusius himself. Rarities include a Passaeus of 1614, and the elephant folio of the *Hortus Eystettensis* of 1613, in unusually fine preservation. There is a fine copy of Rivinus of 1690; and one of Linnaeus' rarest works, his autobiographical pamphlet of 1741, "*Orbis eruditi judicium,*" believed to exist in only four copies.

The third paper was by Dr. Rydberg, a "Review of a recent Monograph of *Campanula rotundifolia* and its Allies." In the discussion of the paper Dr. MacDougal called attention to the work of Goebel on this plant, saying that Goebel had been able to produce rounded leaves on *Campanula,* by experiment, and in any part other than the inflorescence, but that it had not been possible to prevent the formation of the rounded basal leaves.

The final paper was given by Dr. Arthur Hollick on "Buried swamp Deposits of Maryland." Along the shores of the Chesapeake Bay swamp deposits of the Pleistocene era are being uncovered by water action. These occur under from five to thirty feet of gravels. Among the vegetable remains discovered, there were described and shown stumps of the bald cypress, cones of

Digitized by Google

two species of *Pinus* (*P. echinata* and *P. Strobus*), and beech and hickory nuts. Many seeds are now being determined by experts of the Department of Agriculture. When the determination of the seeds is completed a good account of the ancient flora of that region can be given. A comparison of the living with the fossil plants of the locality shows that, except for the cypress, the plants now growing seem the same as those there in Pleistocene time.

In discussing the conditions attendant on the formation of the ancient flora and its disappearance, Dr. Hollick stated that the land had undergone elevation twice and subsidence twice. The first elevation preceded the formation of the flora, which was to be found mainly in the valleys. The area was then depressed and completely submerged, and at length was covered by sand brought in by the waves. After the first elevation and during the first subsidence deposits were formed either *in situ*, as swamps, or at the mouths of the valleys by transported material. These after the second elevation are now being exposed by erosion. The second subsidence is now taking place, and a second series of vegetable deposits is being laid down. The rate of this subsidence has been calculated to be about two feet in the century.

EDWARD S. BURGESS,
Secretary.

NEWS ITEMS

Mr. Homer D. House, Syracuse University, 1902, has entered Columbia University as a graduate student in botany.

Professor A. D. Selby, botanist of the Ohio Agricultural Experiment Station, is carrying on some special lines of research at the New York Botanical Garden.

The editor of *Torreya* spent the greater part of the months of October and November in Florida, studying and collecting the marine algae of that region.

A suggestive nature study leaflet entitled "Plant-Travellers" has recently been issued by Professor Clarence Moores Weed, of the New Hampshire Agricultural Experiment Station.

The large collection of West Indian and South American ferns accumulated by the late George S. Jenman, of Georgetown, British Guiana, has been purchased by the New York Botanical Garden.

Digitized by Google

Dr. Frederic E. Clements and wife, of the University of Nebraska, have recently devoted a few weeks to consulting the herbarium and library of Columbia University and the New York Botanical Garden.

Mr. R. S. Williams is again at the New York Botanical Garden after a year and a half spent in Bolivia where he has made extensive collections of plants. His gatherings are particularly rich in bryophytes and ferns.

Dr. William Austin Cannon, of the New York Botanical Garden, has been awarded a grant of five hundred dollars by the Carnegie Institution for the completion of cytological researches relating especially to the oögenesis, spermatogenesis and fertilization of certain plant hybrids.

Professor F. S. Earle returned to New York on December 2 from a six weeks' visit to the island of Jamaica. He was especially occupied while there in gathering data for a study of the diseases of logwood, cocoanut, and other plants of economic importance.

Among the botanists visiting New York in the past few weeks have been Professor Treub, Director of the Botanical Garden at Buitenzorg, Java; Professor F. E. Weiss of the Owens College, Manchester, England; and Professors Lester F. Ward and F. H. Knowlton, of Washington, D. C.

The American Association for the Advancement of Science, the Botanical Society of America, the Society for Plant Morphology and Physiology, and the Botanists of the Central and Western States all hold meetings in Washington, D. C., during "Convocation Week," December 27, 1902, to January 3, 1903.

The *Revue Bryologique* announces the death of the distinguished bryologist, K. Gustav Limpricht, which occured at Breslau on the 20th of October in his 69th year. Limpricht was best known by his masterly treatment of the Musci of Germany, Austria, and Switzerland in Rabenhorst's Kryptogamen-Flora. His writings on the Hepaticae also are important and thorough-going.

"The Ulothricaceae and Chaetophoraceae of the United States," by Dr. Tracy Elliot Hazen, comprising Vol. 11, No. 2, of the Memoirs of the Torrey Botanical Club, was issued in

Digitized by Google

October; the "History of Pre-Clusian Botany in its Relation to Aster," by Dr. Edward Sandford Burgess, constituting Vol. 10 of the Memoirs, was published in November; and the "Flora of New Providence and Andros (Bahama Islands)" by Mrs. Alice R. Northrop, forming No. 1 of Vol. 12 of this series, was issued December 10.

Messrs. Charles Humphrey Bissell and Luman Andrews have recently published a "Flora of the Town of Southington and its Vicinity: A List of the Fern and Seed Plants growing without Cultivation." In an area of approximately thirty-six square miles 1,201 species are listed. An interesting comparison is made, by families, with the 1,563 species reported in the Flora of Vermont published in 1900.

The death of Dr. Timothy Field Allen occurred at his home in New York on December 5, after an illness of many months. He was born in Westminster, Vt., April 24, 1837. Dr. Allen was not only distinguished in his profession as a physician and surgeon, but was also for many years the leading American student of the Characeae. An account of his collections of Characeae, which he presented to the New York Botanical Garden about two years ago, was published in the *Journal* of the Garden for April, 1901. Dr. Allen was a charter member of the Torrey Botanical Club and had been for many years its senior Vice-President. It is expected that a more extended notice of his life and work will appear in an early number of the *Bulletin* of the Club.

ERRATA, VOLUME 2

Page 49, 11th line, *for* writter, *read* writer.
Page 69, 1st line, *for* Berolensis, *read* Berolinensis.
Page 72, 25th line, *for* humosa, *read* humerosa.
Page 96, 3d line, *for* Planting, *read* Plant.
Page 173, 7th line, *for* microsporangia, *read* macrosporangia.
Page 173, 8th line, *for* microspores, *read* macrospores.

Digitized by Google

INDEX TO VOLUME II

New names and the names of new genera and species are printed in **boldface type.**

Abies grandis, 129
Abrams, L. R., A new Hemizonia from California, 122
Acer circinnatum, 130, 132, 133; macrophyllum, 130; nigrum, 186; Pennsylvanicum, 174
Acorus Calamus, 187
Acrostichum Haddeni, 146
Adopogon Caroliniaum, 104
Agarum, 76
Alaria, 76
Alleghanies, Viola renifolia in the Pennsylvanian, 75
Allen, J. A., personal, 14
Allen, T. F., death of, 192
Alliaria Alliaria, 52
Alnus, 130, 132; Oregana, 130
Amaranthus crispus, 51
Amelanchier, 131; Botryapium, 52
American Society of Naturalists, 13
Ammophila, 59
Amorphophallus, 126
Anderson, A. P., 59; personal, 144
Andromeda phillyreaefolia, 158
Androsace pinetorum, 156
Anemia robusta, 145; **supercretacea,** 145
Andrews, L., see Bissell
Anemone globosa, 156
Antennaria aprica, 156; neglecta, 53
Anthoceros punctatus, 50
Anthurium, 12
Anthurus borealis, 49
Aquilegia Eastwoodiae, 75; micrantha Mancosana, 75; **Mancosana,** 75
Aquilegia, The name of a western, 75
Aragallus pinetorum **Veganus,** 155
Araliopsis, 35
Arctostaphylos Uva-ursi, 59
Arenaria verna, 47
Aristolochia Serpentaria, 103
Armillaria mellea, 25
Asclepias rubra, 104
Ascocorticium, 11
Asperula azurea, 106; galioides, 106; montana, 106, 108; setosa, 106; tinctoria, 106
Aspidium Kennerleyi, 146
Asplenium magnum, 146; viride, 47
Aster amellus, 60
Astragalus accumbens, 155; Jesupi, 47; mollissimus, 154; **simulans,** 154
Azalea lutea, 161

Bactris, 12
Bailey, L. H , personal, 176
Ballia, 149
Barnes, C. R., personal, 62
Bateson, W., personal, 176
Batrachium trichophyllum, 104
Beach, S. A., personal, 176
Bennett, A. W., death of, 48
Berberis, 130
Berry, W., Additional Notes on Liriodendron Leaves, 33; Notes on the Local Flora, 103
Bidens Beckii, 27
Bissell, C. H., and Andrews, L., work of, 192
Blakeslee, A. F., personal, 64
Blephariglottis grandiflora, 47
Bolandra, 125
Boletinus, 2
Boletus, 2
Bostrychia, 149; Calliptera, 149; Moritziana, 151
Botanical Garden, New York, 29, 31, 62, 64
Botanical Society of America, 63, 128
Botanisches Centralblatt, 16
Botanists of the Central States, 13
Botrychium neglectum, 187; lanceolatum, 187
Brachythecium acutum, 51; Noveboracense, 51; oxycladon, 51
Britten, J., personal, 13
Britton, E. G., Bryological Notes, 44; Notes on a Long Island Moss, 91
Britton, N. L., A new Mouriria from Porto Rico, 10; A new Peperomia from the Island of St. Kitts, 43; An undescribed species of Hydrophyllum, 123; personal, 79, 144, 160
Brodiaea, 61

Digitized by Google

Brooklyn Institute of Arts and Sciences, 62, 63
Brown, A., personal, 126
Bryhnia Novae-Angliae, 51
Bryological Notes, 44
Bryum proligerum, 44
Burgess, E. S., 28, 60, 192; Proceedings of the Club, 10, 45, 58, 76, 111, 186
Burnett, D. A., personal, 62
Burnham, S. H., 27; Proceedings of the Club, 92
Buxbaumia aphylla, 50

California, A new Hemizonia from, 122
Callipeltis Cucullaria, 106
Caloglossa Leprieurii in Mountain Streams, 149; Amboinensis, 151; Beccarii, 151; Leprieurii, 152; Zanzibariensis, 151
Camarophyllus, 73
Campanula, 189; rotundifolia, 189
Campbell, D. H., work of, 63
Campbell's University Text Book of Botany, 108
Campylium, 50
Cannon, W. A., 61; personal, 94, 191; Field Notes on Rhododendron Catawbiense, 161
Cantharis Nuttallii, 155
Capsella Heegeri, 67; Bursa-pastoris, 67
Cardamine flexuosa, 52; Pennsylvanica, 52
Carduus ochrocentrus, 42; **albiflora**, 42
Castalia odorata, 27; tuberosa, 27
Castanea dentata, 103
Castilleja acuminata, 47
Catalpa, 174
Catenella impudica, 149
Caulophyllum thalictroides, 104
Cereus giganteus, 62
Cercosporidium euphorbiae, 159; Helleri, 160
Cecropia, 12
Chamberlain, C. J., personal, 16, 127
Chara, Description of a new fossil Species of, 71; compressa, 72; **Springerae**, 72; Stantoni, 72
Chelidonium laciniatum, 67; majus, 67
Chenopodium Boscianum, 51
Chesnut, V. K., personal, 31
Chrysosplenium, 125
Cimicifuga racemosa, 104
Cissites acuminatus, 35, 36; obtusilobus, 35
Clarke, C. H., personal, 64
Clements, F. E., personal, 191
Cleome serrulata albiflora, 42
Clethra alnifolia, 104
Cliffbrake, The Habitat of the slender, 176
Climacium, 188; Kindbergii, 51
Clinopodium vulgare, 52
Cockerell, T. D. A., Notes on southwestern Plants, 42; Some New Mexico Plants, 154; The Name of a Western Aquilegia, 75
Colorado, Fossil Ferns from the Laramie Group of, 145
Comandra livida, 47
Commelina, 12
Conard, H. S., work of, 63
Conference on Plant Breeding, 176
Conopholis Americana, 104
Conservation of Energy in Mycological Clubs, 1
Cook, O. F., personal, 80
Copeland, E., personal, 63
Coprineae, Keys to the North American Species of the, 37
Coprinus, 2
Coptis trifolia, 104
Corema Conradii, 59
Cornus Nuttallii, 130
Cortinarius, A Key to the North American Species of, 169, 180
Corylus rostrata, 131
Coulter, S. M., personal, 63
Coville, F. V., personal, 79, 127
Cowles, H. C., personal, 63, 95
Crataegus, 32
Credneria, 35
Crepis virens, 52
Crescentia, 93
Crucianella gilanica, 106, 108; herbacea, 106; macrostachya, 106, 108
Cryptogramma Stelleri, 176
Curtis, C. C., MacDougal's Elementary Plant Physiology, 56
Cuscuta Gronovii, 105; indecora, 105
Cypripedium Calceolus, 86; flavescens, 87; hirsutum, 84, 85; parviflorum, 85–87, 103; passerinum, 86; reginae, 187

Daedalea quercina, 88; unicolor, 89
Davidson, A., personal, 31
Davis, B. M., personal, 95
Davy, J. B., work of, 160
Davis, N. F., personal, 63
Davis, W. T., Hypochaeris radicata, 45
Delabarre, E. B., work of, 175
Delesseria Leprieurii, 151
Dendrium buxifolium, 163; prostratum, 163
Diapensia, 47
Dichelostemma capitatum, 61
Dichondra, 62
Dicranum longifolium subalpinum, 47

Digitized by Google

Dieffenbachia, 12
Diodia teres, 106, 108; Virginiana, 106, 108
Dioscorea, 12
Diphyscium sessile, 180
Draba incana, 47; streptocarpa, 156
Dryopteris fragrans, 47; simulata, 32, 51, 188
Duggar, B. M., personal, 94
Dunn, L. B., personal, 63

Earle, F. S., Keys to the North American Species of the Coprineae, 37; A Key to the North American Species of Cortinarius, 169, 180; A Key to the North American Genera and Species of the Hygrophoreae, 53, 73; A Key to the North American Species of Hypholoma, 22; A Key to the North American Species of Lactarius, 139, 152; A Key to the North American Species of Russula, 101, 117; A much named Fungus, 159; The Field Study of Mushrooms, 2; personal, 45, 62, 94, 125, 126, 191
Echinopanax horridum, 133
Eggert, H., Notes on Verbena, 123
Elatine Americana, 52
Eleocharis elongata, 157
Ellis, J. B., personal, 95
Emerson, J. T., personal, 79
Erigeron hyssopifolius, 47
Eriophorum gracile, 103
Erodium, 52
Ephedra, 76
Erythronium albidum, 103
Eupatorium, 12
Euphorbia, 12, 159; maculata, 52
Euphrasia, 186
Euonymus Americanus, 104
Entada scandens, 5
Equisetum, 11
Equisetum hyemale, 51; sylvaticum, 51
Eurhynchium strigosum praecox, 51
Evans, A. W., personal, 126, 144
Excursion, Torrey Club, Fourth of July, 93
Expedition to Nachvak, Labrador, Note on the Report of the Brown-Harvard, 175

Fallugia micrantha, 42
Fawcett, W., personal, 176
Ferns, Fossil, from the Laramie Group of Colorado, 145
Ficus, 12
Field, G. W., personal, 112
Field Days, Torrey Club, 77
Field Study of Mushrooms, The, 2
Fissidens grandifrons, 44
Flora of Long Island, Additions to the recorded, 49
Florida, A seabeach Helianthus from, 74
Fragaria Americana, 159; vesca alba, 158
Fraxinus Oregana, 130
Frost, C. C., herbarium of, 94
Forsythia, 137
Favolus, 87
Fowler, J., personal, 144
Fucus, Extrusion of the Gametes in, 134; edentatus, 137; evanescens, 136; serratus, 76, 137; spiralis, 136; vesiculosus, 136
Fujii, K., personal, 31
Fungus, A much named, 159
Fungi, The Bracket, 87
Fusicladium fasciculatum, 159, 160

Galium aparine, 106; Mollugo, 106; pilosum, 106; Parisiense, 106; tinctorium, 106; triflorum, 106
Galloway, B. T., personal, 127
Gametes in Fucus, Extrusion of the, 134
Gaultheria, 130
Gaura biennis, 52
Gentiana acuta, 47
Georgia, A Visit to Okefinokee Swamp in southern, 156
Geranium Bicknellii, 52; dissectum, 52
Gerardia decemloba, 188
Gibbs, R. E., work of, 63
Gies, W. J., personal, 96
Gleditsia triacanthos, 5
Gleichenia, 26; delicatula, 147; rhombifolia, 147
Gloiosiphonia, 76
Gnaphalium, 46
Gomphidius, 53
Goniopteris reptans, 76; tetragona, 76
Greene, E. L., personal, 144
Grewiopsis, 35
Griffiths, D., personal, 31, 63, 94, 160
Grout, A. J., Additions to the recorded Flora of Long Island, 49
Gymnocladus dioica, 5
Gymnogongrus, 149

Haastia, 46
Halictus anomalus, 43; pruinosus, 43
Halsted, B. D., The "Tendrils" of the Kentucky Coffee-Tree, 5; On the Behavior of Mutilated Seedlings, 17; personal, 128
Hamamelis, 21
Harper, R. M., Ilex myrtifolia with yellow Fruit, 43; A Visit to Okefinokee Swamp in Southern Georgia, 156; personal, 62
Havard, V., personal, 40

Digitized by Google

Hays, W. M., personal, 176
Hazen, T. E., The Habitat of the slender Cliffbrake, 176; personal, 144, 190
Hedysarum Americanum, 47
Helianthus, from Florida, A seabeach, 74; annuus, 19; carnosus, 74; heterophyllus, 75
Hemieva, 125
Hemizonia from California, A new, 122; grandifolia, 122; luzulaefolia, 122
Herbarium Specimens in Classes, Handling, 38
Heuchera, 125
Hillia, 12
Hitchcock, A. S., personal, 144
Hollick, A., Fossil Ferns from the Laramie Group of Colorado, 145; Flora of Provincetown, 58
Holm, T., personal, 48
Holodiscus discolor, 130, 131
Hopkins Seaside Laboratory, 94
Horticultural Society of New York, 95
House, H. D., The acaulescent Violets of Central New York, 68; personal, 190
Houstonia coerulea, 106; longifolia, 106
Howe, C. D., Some Notes on the Dwarf Mistletoe, 8
Howe, M. A., A note on the Vitality of the Spores of Marsilea, 120; Cacloglossa Leprieurii in Mountain Streams, 149; Note on the Report of the Brown-Harvard Expedition to Nachvak, Labrador, 175; personal, 190
Hydrangea, 125
Hydrophyllum, An undescribed Species of, 123; patens, 123; Virginianum, 123
Hygrocybe, 73
Hygrophoreae, A Key to the North American Genera and Species of the, 53, 73
Hygrophorus, 2, 53; Key to the Species, 73
Hypericum prolificum, 52
Hypochaeris radicata, 45, 52
Hypholoma, A Key to the North American Species of, 22
Hypnum admistum, 50, 91
cordifolium, 50
crista-castrensis, 50
fluitans Atlanticum, 47
micans, 91
molluscum, 50
Patientiae, 50

Ilex aquifolium, 44; myrtifolia, 43; myrtifolia with Yellow Fruit, 43; opaca, 43; verticillata, 44
Index to Botanical Literature, A new, 184
Ipomoea purpurea, 17
Isotria affinis, A new Station for, 143
Itea, 125

Key to the North American Species of Cortinarius, A, 169, 180
Key to the North American Genera and Species of the Hygrophoreae, A, 53, 73
Key to the North American Species of Hypholoma, A, 22
Key to the North American Species of Lactarius, A, 139, 152
Key to the North American Species of Russula, A, 101, 117
Keys to the North American Species of the Coprineae, 37
Knowlton, F. H., personal, 191

Labrador, Note on the Report of the Brown-Harvard Expedition to Nachvak, 175
Lady's-Slippers, Our yellow, 84
Lactarius, 2, 187; A Key to the North American Species of, 139, 152
Lactuca sagittifolia, 53; scariola, 174
Laminaria longicruris, 76; platymeris, 76
Lamson-Scribner, F., personal, 13
Laramie Group of Colorado, Fossil Ferns from the, 145
Lawson, A. A., 94
Leaves, Mutual Irregularities in Opposite, 137
Lechea villosa, 52
Lectures, Botanical Garden, 64
Lentinus, 2
Lenzitis betulina, 88; sepiaria, 88
Leontodon nudicaule, 53
Leptilon, 11
Leptodon, 188
Leucampyx Newberryi, 42
Limacium, 53, 54
Limpricht, K. G., death of, 191
Liriodendron Leaves, Additional Notes on, 33; giganteum, 36; Meekii, 36; primaevum, 36; semialatum, 35; Tulipifera, 34–36
Liriodendropsis angustifolia, 36; simplex, 36
Lithophragma, 125
Lloyd, F. E., An interesting Irregularity in a Rose Flower, 90; Handling Herbarium Specimens in Classes, 38; Mutual Irregularities in opposite Leaves, 137; Observations on Lycopodium, 20; Vivipary in Podocarpus, 113; Vacation Observations, 173, 177; personal, 94
Local Flora, Notes on, 103
Long Island, Additions to the recorded Flora of, 49
Long Island Moss, Notes on a, 91

Digitized by Google

Lonicera, 137; Xylosteum, 152
Lotus corniculatus, 52
Lunularia cruciata "in Fruit," 124
Lupinus argophyllus, 42; decumbens argophyllus, 42; Helleri, 42; perennis, 104
Lychnis Coronaria, 51
Lycopodium, Observations on, 20; alpinum, 20; complanatum, 20; lucidulum, 51, 177; porophilum, 21; Selago, 21, 177; tristachyum, 20
Lyon, H. L., personal, 63, 144

MacDougal's "Elementary Plant Physiology," 56
MacDougal, D. T., The Origin of Species by Mutation, 65, 81, 97; personal, 14, 62
Macfarlane, J. M., personal, 79
Macloskie, G., 144
MacMillan, C., personal, 48
MacRae, L. G., personal, 95
Magnolia Virginiana, 104
Marasmius, 2
Marcgravia, 12
Marsilea, A Note on the Vitality of the Spores of, 120; Aegyptiaca, 120; quadrifolia, 120; vestita, 121
Martynia, 93
Melastoma, 12
Melocalamus, 116
Melocanna bambusoides, 116
Merrill, E. D., personal, 48, 160
Micrampelis Oregana, 132
Microsphaera grossulariae, 49; quercina, 49
Mistletoe, Some Notes on the Dwarf, 8
Monotropsis odorata, 93
Moore, A. C., 95
Moore, G. T., 63, 95
Morris, D., 176
Mouriria from Porto Rico, A new, 10; Domingensis, 10; **Helleri**, 10; spathulata, 10
Mnium punctatum elatum, 50; rostratum, 50
Munson, T. V., personal, 176
Murrill, W. A., Animal Mycophagists, 25; personal, 126
Mutation, The Origin of Species by, 65, 81, 97
Mutual Irregularities in opposite Leaves, 137
Mushrooms, The Field Study of, 2
Mycological Clubs, Conservation of Energy in, 1
Mycophagists, Animal, 25

Nabalus Bootii, 47
Nash, G. V., personal, 79, 112
Nelumbo, 63
New Jersey, A new Violet from, 24
New Mexico Plants, Some, 154
New York, The acaulescent Violets of Central, 68
Nicholson, G., personal, 176
Nitella, 125
Nyctalis, 53, 54

Ochlandra, 116
Oenothera albida, 82; brevistylis, 82; elliptica, 82, 85; gigas, 82; laevifolia, 81, 82; Lamarckiana, 81, 82, 100; lata, 82, 83; leptocarpa, 82; nanella, 82; oblonga, 82; rubrinervis, 82; scintillans, 82, 83; sublinearis, 83
Okefinokee Swamp, in Southern Georgia, A visit to, 156
Onagra biennis, 81, 82, 100; brevistylis, 100; gigas, 100; lata, 100; nanella, 100; rubrinervis. 100
Onoclea, 179; sensibilis, 178
Oregon, The Vegetation of Northwestern, 129
Origin of Species by Mutation, The, 65, 81, 97
Orontium aquaticum, 103

Pachyma Cocos, 59
Palmer, E., personal, 31
Palmer, W., personal, 31
Panicum maximum, 12
Papaver dubium, 52
Parinarium, 7
Parish, L. B., Notes on two Parasitic Plants, 105
Parnassia, 125
Parosela Jamesii, 156
Parthenocissus tricuspidata, 138
Passalora bacilligera, 159; **fasciculata**, 160; **Helleri**, 160
Peck, C. H., personal, 144
Pecopteris sepulta, 147
Pedicularis lanceolata, 52
Peirce, G. J., Extrusion of the Gametes in Fucus, 134
Pellea gracilis, 47, 176
Peperomia from the Island of St. Kitts, A new, 43; **Davisii**, 43; inophylla, 43
Peritoma serrulatum albiflorum, 42
Persea gratissima, 12
Petiolate Connation in Trifolium pratense, 183
Petunia parviflora, 52
Phaseolus, 137
Philadelphus, 125; Californicus, 130
Philodendron, 12
Phoradendron flavescens macrophyllum, 105; Bolleanum, 106; Californicum, 106; juniperinum, 106

Digitized by Google

Phryma leptostachya, 52
Phyllactinia suffulta, 49
Phyllites obcordatus, 36
Phyllospadix, 63
Physa humosa, 72
Physalis heterophylla, 52
Phytolacca decandra, The Pith Cells of, 141
Picea alba, 26; Sitchensis, 133
Picris hieracioides, 53
Pinchot, G., personal, 79
Pinguicula vulgaris, 47
Pinus, 72; contorta, 133; echinata, 190; rigida, 59; Strobus, 190
Piricularia euphorbiae, 160
Plagiothecium denticulatum, 50; Ruthei, 50; striatellum, 50; sylvaticum, 50
Plant Preservation, Prize Essays, 64
Plant Protection Fund, Prizes, 14
Plantago aristata, 52; media, 52
Plantanus, 35
Plants, Notes on two parasitic, 105; Notes on Southwestern, 42
Pleuridium subulatum, 50
Podocarpus, 12; Vivipary in, 113; Makoyi, 113
Pogonia affinis, 143; verticillata, 143
Poinceana, 58
Polemonium delicatum, 156
Pollard, C. L., A New Violet from New Jersey, 24; personal, 31, 96
Polypodium polypodioides, 157; vivipa-rum, 47
Polyporus applanatus, 89; arcularius, 89; betulinus, 88; brumalis, 90; elegans, 89; flavo-virens, 25; fomentarius, 89; frondosus, 89; hirsutus, 89; igniarius, 89; leucophaeus, 89; lucidus, 88; pergamenus, 88; picipes, 89; rimosus, 88; splendens, 90; sulphureus, 89; versicolor, 88
Polystichum Braunii, 47; **Hillsianum**, 146
Polytrichum formosum pallidisetum, 27; Ohioense, 27; pallidisetum, 27
Pontederia, 157
Porotrichum Alleghaniense, 188
Porphyra, 76
Porto Rico, A new Mouriria from, 10
Potamogeton crispus, 51
Potentilla arguta, 52; intermedia, 52; subviscosa, 155
Pound, R., personal, 63
Prescott, S. C., personal, 112
Pringle, C. G., personal, 94
Proceedings of the Club, 10, 26, 45, 58, 76, 92, 111, 125, 186
Prunus emarginata, 30
Pseudotsuga mucronata, 129
Psilotum, 11
Pteridium aquilinum, 132
Pylaisia Schimperi, 51
Pyrola minor, 47

Queen Charlotte Islands, A Saxifrage from the, and its Relatives, 55
Quercus alba, 49; coccinea, 117; fusiformis, 117; Garryana, 130; palustris, 117; prinoides, 51; rubra, 117; velutina, 117

Railroad Ties, A new Timber for, 6
Ranunculus delphinifolius, 104; hispidus, 51; micropetalus, 156; obtusiusculus, 104; pusillus, 104; scleratus, 104; septentrionalis, 51
Raoulia, 46
Raphidostegium **admistum**, 50, 91; Jamesii, 44; recurvans, 51
Razoumofskya pusilla, 8, 9
Reviews: Campbell's "University Text-Book of Botany," 108; Lloyd's "Comparative Embryology of the Rubiaceae," 106; MacDougal's "Elementary Plant Physiology," 56; Royal Society's "International Catalogue of Scientific Literature," 184; de Vries' "Die Mutationstheorie," 65, 81, 97
Rhododendron, A Georgia, 9; Catawbiense, Field-notes on, 161; **Cuthbertii**, 9; maximum, 104, 161; punctatum, 9
Rhus radicans, 138
Ribes, 125
Richards, H. M., 92
Richardson, R. S., personal, 63
Richardsonia pilosa, 106, 108
Robinia, 88
Robinson, B. L., personal, 13, 32
Robinson, W. J., personal, 112
Rosa, 131
Rose Flower, An interesting Irregularity in a, 90
Rubia tinctoria, 106
Rubus, 32; Baileyanus, 52; hispidus, 59; nigrobaccus, 137; Nutkanus, 132; occidentalis, 137; setosus, 52; spectabilis, 132, 133
Rumex Patientiae, 51; persicarioides, 51
Rusby, H. H., A new Timber for Railroad Ties, 6
Russula, 2; A Key to the North American Species of, 101, 117
Rydberg, P. A., A new Station for Isotria affinis, 143; Is the white-fruited Strawberry of Pennsylvania a Native Species? 158; Our yellow Lady's-Slippers, 84; personal, 63

St. Kitts, A new Peperomia from the Island of, 43

Digitized by Google

Salicornia, 187
Salix, 72, 93; alba, 88; Uva-Ursi, 47
Salomonia commutata, 103
Sambucus Canadensis, 49
Sarracenia minor, 157
Sassafras, 35
Saxifraga Aizoön, 47; austromontana, 156; autumnalis, 47; ferruginea, 55; **Newcombei**, 55; oppositifolia, 47; rivularis, 48
Saxifrage from the Queen Charlotte Islands, and its Relatives, A, 55
Schrenk, H. von, 63
Scirpus cæspitosus, 51
Scleria, 12
Sclerolepis uniflora, 105
Scolecotrichum Euphorbiæ, 159, 160
Seedlings, On the Behavior of mutilated, 17
Selaginella, 11; **acanthonota**, 172; rupestris, 172; **Sherwoodii**, 172; tortipila, 172
Selaginella in the Southern Flora, Two new Species of, 172
Selby, A. D., personal, 190
Seligeria campylopoda, 27
Senecio obovatus, 53, 105
Seymour, A. B., personal, 112
Shafer, J. A., personal, 160
Sharon Biological Observatory, 112
Shaw, C. H., personal, 95
Sherardia arvensis, 106
Shinn, J. T., Lunularia cruciata "in Fruit," 124
Silene Caroliniana, 103
Slosson, M., 112
Small, J. K., A Georgia Rhododendron, 9; A Saxifrage from the Queen Charlotte Islands and its Relatives, 55; A Seabeach Helianthus from Florida, 74
Smith, A. M., personal, 62
Smith, E., work of, 127
Smith, J. G., personal, 63
Society for Plant Morphology and Physiology, 15
Solidago juncea, 52; Virgaurea, 47
Sphaerium magnum, 72
Spillman, W. J., personal, 13
Spiraea Douglasii, 130
Spores of Marsilea, A note on the Vitality of the, 120
Stachys, 187
Stenopteris **cretacea**, 148
Stone, W., Viola renifolia in the Pennsylvanian Alleghenies, 75
Strawberry, White-Fruited, of Pennsylvania, 158
Stypocaulon, 76
Symphoricarpos, 131
Syracuse Botanical Club, 60, 127
Syringa vulgaris, 137

Taraxacum Taraxacum, 43
Taxodium imbricarium, 157, 158
Taxus, 113; brevifolia, 130
Telesonix, 125
Tellima, 125
"Tendrils" of the Kentucky Coffee-Tree, The, 5
Thaumatopteris, 148
Therofon, 125
Thelia asprella, 50; Lescurii, 50
Thuya gigantea, 129
Tiarella, 125
Tillandsia Balbiviana, 117; usneoides, 15
Torrey Club, Proceedings of, 10, 26, 45, 58, 76, 92, 111, 125, 186
Tragopogon pratensis, 104; porrifolius, 104
Trametes suavolens, 84
Treub, personal, 191
Trifolium pratense, Petiolate Connation in, 183; pratense quinquefolium, 184
Trollius laxus, 104
True, R. H., personal, 95
Tsuga heterophylla, 132
Typha, 93

Underwood, L. M., Campbell's "University Text Book of Botany," 108; Conservation of energy in Mycological Clubs, 1; The Bracket Fungi, 87; Two new Species of Selaginella in the southern Flora, 172; A new Index to Botanical Literature, 184
Utricularia, 13; clandestina, 104; inflata, 104; vulgaris, 104

Vacation Observations, 173, 177
Vaccinium, 132; caespitosum, 47; uliginosum, 47; Vitis-Idaea, 47
Valeriana officinalis, 104
Vegetation of Northwestern Oregon, The, 129
Verbena bipinnatifida, 124; bracteosa, 124; **brevibracteata**, 124; **racemosa**, 123; Wrightii, 124
Vermont Botanical Club, 13, 31
Viburnum ellipticum, 130; pauciflorum, 47
Viola, 12, 32; affinis, 70; alsophila, 71; amoena, 71; **Angellae**, 24, 59, 93; asarifolia, 68; Atlantica, 52; blanda amoena, 71; blanda renifolia, 71; blanda palustriformis, 71; Brittoniana, 24; communis, 70; cordifolia, 69; crenulata, 70; cucullata palmata, 68; cucullata, 70; falcata, 24; lanceolata,

Digitized by Google

71, 101; Le Conteana, 71; nodosa, 69; palmata, 24, 25; palmata cucullata, 70; palmata asarifolia, 68; palmata sororia, 68; obliqua, 70; odorata, 70; papilionacea, 70; primulaefolia, 104; renifolia, 71, 75; rostrata, 104; rotundifolia, 70, 104; Selkirkii, 70; sororia, 68, 69; viarum, 24: villosa, 69
Viola renifolia in the Pennsylvanian Alleghanies, 75
Violet from New Jersey, A new, 24
Violets of Central New York, The acaulescent, 68
Vittaria, 13, 46, 187; lineata, 29

Ward, L. F., personal, 191
Waugh, F. A., personal, 127
Webera sessilis, 180
Weiss, F. E., personal, 191
Went, F. A. F. C., personal, 48
White, C. A., Petiolate Connation in Trifolium pratense, 183
White, V. S., work of, 94
"Wild Flower Presentation Society of America," 96, 128
Williams, R. S., personal, 191
Willis, O. R., death of, 80
Willugbyaea scandens, 105
Wilson, P., personal, 126, 144
Woodsia alpina, 47, 176; glabella, 47, 176
Woodwardia Virginica, 157

Xanthium Canadense, 52

Zizia cordata, 52

Digitized by Google

Digitized by Google

OTHER PUBLICATIONS

OF THE

TORREY BOTANICAL CLUB

(1) BULLETIN

A monthly journal devoted to general botany. Vol. 28, published in 1901, contained 706 pages of text and 49 full page plates. Price $3.00 per annum. For Europe 14 shillings. Dulau & Co., 37 Soho Square, London, are agents for England.

Of former volumes, only 1–6 and 19–28 can be supplied entire from the stock in hand, but the completion of sets will be undertaken. Yearly volumes 1–5 (1870–1874), one dollar each. Vol. 6 (1875–1879), extending over five years, is furnished at the subscription price of five dollars. Vols. 19–27 (1882–1900) are furnished at the published price of two dollars each; Vol. 28, three dollars.

Single copies (30 cts.) will be furnished only when not breaking complete volumes.

(2) MEMOIRS

The MEMOIRS are published at irregular intervals. Volumes 1–11 are now completed and No. 1 of Vol. 12 has been issued. The subscription price is fixed at $3.00 per volume in advance. The numbers can also be purchased singly. A list of titles of the individual papers and of prices will be furnished on application.

(3) **The Preliminary Catalogue of Anthophyta and Pteridophyta** reported as growing within one hundred miles of New York, 1888. Price, $1.00.

Correspondence relating to the above publications should be addressed to

THE TORREY BOTANICAL CLUB
Columbia University
NEW YORK CITY

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google